

REMARKS

In the Final Office Action mailed July 27, 2005, Claims 1-19, of which Claims 1, 6, 8, 10-11, 13, 18, and 19 are independent, are pending. Claim 17 stands rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In addition, Claims 1-9, 18, and 19 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Jordan et al. (U.S. Patent No. 6,438,652) ("Jordan '652"). Finally, Claims 10-17 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Jordan (U.S. Patent No. 6,438,652) ("Jordan '652") in view of Zisapel et al. (U.S. Patent No. 6,665,702) ("Zisapel '702").

After a careful review of the Office Action, Applicants' currently amended and pending claims, and the cited references, Applicants respectfully request reconsideration of the pending rejections in view of the following remarks and clarifications.

I. CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Claim 17 stands rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Corrections have been made to overcome these alleged informalities.

II. CLAIM REJECTIONS UNDER 35 U.S.C. §102(e)

Claims 1-9, 18, and 19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Jordan et al. (U.S. Patent No. 6,438,652) ("Jordan '652"). Applicants respectively traverse.

A. Applicant's Presently Claimed Invention

This present invention relates to load balancing. More specifically, it relates to using a

proxy server to provide load balancing. (Applicant's Specification at p. 2, lines 3-4).

The system and method of the present invention advantageously provides a system for load balancing. Specifically, a control node may be provided that balances the traffic load sent to proxies in a network. The control node may maintain information that assigns the traffic load to the proxies.

In one example of the present invention, a control node is coupled to a plurality of proxies. The control node may receive information from the plurality of proxies, maintain a list of all proxies, and assigns a weight to each of the proxies in the list, the weight based upon information received from the proxies. (Applicant's Specification at p. 3, lines 4-11).

Applicants provide Figure 1 which is a diagram illustrating a preferred embodiment of the system for load balancing in accordance with the present invention. As Applicants describe,

Referring now to Figure 1, a system includes a user agent 102, a first proxy 104, a redirect server 106, a network 108, a control node 110 (including a user agent profile database 111), a location server 112, a second proxy 114, third proxy 116, fourth proxy 118, a network 120, and a user agent 122.

The user agent 102 is coupled to the proxy 104. The proxy 104 is coupled to the network 108 and the redirect server 106. The network 108 is coupled to the control node 110. The control node 110 is coupled to the proxies 114, 116, 118, and the location server 112. The proxies 114, 116, and 118 are coupled to the network 120. The network 120 is coupled to the user agent 122.

The functions of the user agents 102 and 122 may be implemented by computer instructions stored in memory and executed by a processor. A user agent (caller) may transmit messages to another agent (callee). The messages may be of any type or format.

The functions of the proxies 104, 114, 116, and 118 may be implemented using computer instructions stored in a memory and executed by a processor. The proxies 104, 114, 116, and 118 may be stateless or stateful. Also, the proxies 104, 114, 116, and 118 may stay in the path of a call for the duration of a session or may be out of the path. In addition, the proxies may
5 implement SIP or any other type of protocol.

Any of the proxies 104, 114, 116, or 118 may route messages to other proxies or other devices. A downstream proxy (e.g., proxies 114, 116, or 118) may receive messages from other proxies (e.g., upstream proxies) or other devices (e.g., the SIPCN).

The functions of the redirect server 106 may be implemented using computer instructions
10 stored in a memory and executed by a processor. The redirect server 106 includes information needed to route calls from the caller to the callee across the network 108.

The networks 108 and 120 may be any type of network used to transmit any type of information. In one example, the networks 108 and 120 may be IP networks, which transmit packets of information. Other types of networks are possible.

15 The functions of the control node 110 may be implemented using computer instructions stored in a memory and executed by a processor. A list of all downstream proxies is kept on the control node. Each of the proxies may be weighted using the information available to the control node 110. Once the weighting is performed, messages may be assigned to proxies based upon the weighted values.

20 Weighting may be done by any number of methods. For example, weighting may be done by tracking the traffic load of the proxies; by determining the load on the proxies by tracking the delay in the responses of the proxies; or by monitoring the load on the proxies by querying specific processes of the proxies. Other types of weighting algorithms may also be

used. (Applicant's Specification at p. 5, line 3 – p. 6, line 19) (emphasis added).

More specifically, and as Applicant's describe with respect to Figure 2, one example of a SIP record in the database of a control node (e.g., a SPCN) is described. The SP table in the database may include a plurality of these records. The record includes a Destination IP field 202,
5 an active sessions field 204, a delay field 206, a domain name field 208, an LU stamp field 210, and an active state field 212. Other fields may also be used.

The record includes a Destination IP field 202 represents the IP address of the destination proxy.

The active sessions field 204 represents a count of the number of active sessions on the
10 SP.

The delay field 206 represents the current delay time between the SIP Control node and the SIP proxy. For example, this value may be in milliseconds.

The domain name field 208 represents the domain name of the SIP proxy.

The LU stamp field 210 represents the last time where the record was updated.

15 The active state field 212 represents the status of the SIP proxy. For example, the status may be alive or dead. Other states may also be defined. (Applicant's Specification at p. 8, lines 1 – 13).

Applicants have revised the presently pending Independent Claims 1, 6, 8, 10, 11, 13, 18, and 19 so that Applicant's presently pending claims expressly recite that they are generally
20 directed to such a control node that receives information from a plurality of downstream proxies wherein such information includes a delay time between control node and downstream proxies.

For example, Independent Claim 1 expressly recites "receiving, at a control node, information from a plurality of downstream proxies the information including a delay time

between the control node and the downstream proxies” and Claim 6 expressly recites the claimed step of “receiving, at a control node, information from a plurality of downstream proxies the information including a delay time between the control node and the downstream proxies.” The remaining independent claims expressly recite similar language. For example, Claim 8 now expressly recites a control node “receiving information including a delay time between the control node and the downstream proxies from the plurality of proxies” and Claim 10 expressly recites the steps of “sending, from a control node, a message to each of the proxies and “determining a response time for each of the messages sent to each of the proxies.” Claims 11, 13, and 18, and 19 include similar limitations.

B. Neither Jordan ‘652 nor Zisapel ‘702 Teach or Suggest a Control Node That Receives Information Including a Delay Time Between Control Node and Downstream Proxies

Jordan ‘652 fails to teach, either expressly or inherently, such a control node that receives information from a plurality of downstream proxies wherein such information includes a delay time between control node and downstream proxies. For example, Jordan ‘652 appears to teach a load monitor for each cache server 150. According to Jordan ‘652, Figs. 2a-2b provide examples of data formats of two tables maintained by the load monitor. As depicted, the tables include a load table 102, and a caching table. (Jordan ‘652, Col. 6 lines 6-10).

Therefore, as is illustrated in Figure 1b, in the system as described and taught by Jordan ‘652, each cache server 150 comprises a load monitor, load tables and cache information (table or hash) (Jordan Figure 1b). Indeed, Jordan ‘652 describes that “Fig. 1b shows another example of a system in a block diagram form employing a collection of proxy cache servers, where a distributed load balancing logic according to the present invention can be applied.” (Jordan ‘652 Col. 5 lines 15-17). Consequently, Jordan ‘652 fails to teach a control node, let alone a control

node that receives information from a plurality of downstream proxies wherein such information includes a delay time between control node and downstream proxies.

Zisapel '702 also fails to teach such a control node that receives information from a plurality of downstream proxies wherein such information includes a delay time between control node and downstream proxies. Rather, Zisapel '702 merely appears to teach "load balancing requests among redundant network servers in different geographical locations." (Zisapel '702, Col. 1, lines 11-14).

To anticipate a claim, "each and every element set forth in the claim [must be] found, either expressly or inherently described, in a single . . . reference." *Vergall Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) (M.P.E.P. Section 2131). Consequently, since neither Jordan '652 nor Zisapel do not teach or suggest "a control node," Jordan '652 and Zisapel '702 simply also does not teach or suggest utilizing a control node that receives information from a plurality of downstream proxies wherein such information includes a delay time between control node and downstream proxies. Jordan '652, either alone or in combination with Zisapel '702, therefore do not to teach every element of the claimed invention and, therefore do not anticipate or render obvious Applicant's presently pending Independent Claims.

Consequently, Independent Claims 1, 6, 8, 10, 11, 13, 18, and 19 are allowable for at least all of the reasons stated above. The remaining claims 2-5, 7, 9, 12, 14, 16 - 17 are all dependent on these allowable independent claims and are therefore allowable for at least the reasons stated above.

III. SUMMARY

In view of the remarks above, Applicants' respectfully submit that the present application is in condition for allowance and solicits action to that end. If there are any additional matters that may be resolved or clarified through a telephone interview, the Examiner is respectfully requested to contact Applicant's undersigned representative.

Respectfully submitted,

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